

Definition(s)	
<ul style="list-style-type: none"> Anorexia: involuntary loss of appetite or desire to eat that results in reduced caloric intake and often weight loss. Cachexia: a complex metabolic syndrome associated with underlying illness and characterized by loss of muscle with or without loss of fat mass Anorexia-Cachexia Syndrome: is a complex syndrome which is often defined in terms of its primary or secondary causes. Primary causes are related to metabolic and neuroendocrine changes directly associated with underlying disease and an ongoing inflammatory state. Secondary causes are aggravating factors (e.g. fatigue, pain, dyspnea, infection, etc) that contribute to weight loss. 	
FOCUSED HEALTH ASSESSMENT	
PHYSICAL ASSESSMENT	SYMPTOM ASSESSMENT
<p>Vital Signs</p> <ul style="list-style-type: none"> Frequency as clinically indicated Orthostatic BP measurements <p>Height and Weight</p> <ul style="list-style-type: none"> Take current weight and compare to pre – treatment or last recorded weight Height Calculate Body Mass Index <p>Observe General Appearance</p> <ul style="list-style-type: none"> Note energy levels (ability to perform ADLs), strength, mobility, and wasting of skeletal muscle, presence of peripheral edema, ascites Assess skin tone, colour, integrity, hydration status Assess urine output Assess daily intake and output Assess skin turgor, capillary refill, mucous membranes <p>Signs and Symptoms of Dehydration</p> <ul style="list-style-type: none"> Increased thirst Dry mouth Decreased urine output Decreased skin turgor Weakness, dizziness, confusion Increased pulse, decreased blood pressure, postural hypotension <p>Other</p> <ul style="list-style-type: none"> Assess other systems or symptoms as per patient complaints (e.g. oral assessment if mucositis or xerostomia, swallowing assessment, abdominal assessment if diarrhea or constipation) Assess available lab results <p>Functional Status</p> <ul style="list-style-type: none"> Activity level/ECOG or PPS 	<p>*Consider contributing factors</p> <p>Normal</p> <ul style="list-style-type: none"> How would you describe your appetite normally/before your diagnosis? How would you describe your diet before your diagnosis? Is there anything causing your lack of appetite? (eg. Recent surgery, medication such as warfarin and antibiotics, inability to swallow) <p>Onset</p> <ul style="list-style-type: none"> When did you notice a change in your appetite? When did you notice a change in your body weight? <p>Provoking / Palliating</p> <ul style="list-style-type: none"> What makes it better? Worse? <p>Quality (in last 24 hours)</p> <ul style="list-style-type: none"> Can you describe your symptoms? How much weight have you lost? Are you still losing weight? How much are you eating and drinking compared to your usual intake? <p>Severity / Other Symptoms</p> <ul style="list-style-type: none"> How bothersome is this symptom to you? (0-10 scale, with 0 not at all – 10 being worst imaginable) Have you been experiencing any other symptoms? (Note presence and severity of any symptoms that may influence nutritional intake such as: diarrhea, constipation, dysphagia, depression, early satiety, fatigue, oral mucositis, nausea or vomiting, pain, taste changes, xerostomia) <p>Treatment</p> <ul style="list-style-type: none"> Using any medications to promote appetite? If so, what type? Effective? Using any nutritional supports? If so, what type? Effective? Any other medications or treatments? (e.g. analgesics, steroids, antidiarrheal agents, antiemetics) Effective? <p>Understanding / Impact on You</p> <ul style="list-style-type: none"> Is this affecting your ability to carry out your normal daily activities (ADLs)? How else is this symptom affecting you or your family? <p>Value</p> <ul style="list-style-type: none"> What do you believe is causing your lack of appetite? What is your acceptable level for this symptom (0 – 10 scale)?

ANOREXIA GRADING SCALE

NCI Common Terminology Criteria for Adverse Events (CTCAE) (Version 5.0)

<u>GRADE 1</u> (Mild)	<u>GRADE 2</u> (Moderate)	<u>GRADE 3</u> (Severe)	<u>GRADE 4</u> (Life threatening; disabling)	GRADE 5
Loss of appetite without alteration in eating habits	Oral intake altered without significant weight loss or malnutrition; oral nutritional supplements indicated	Associated with significant weight loss or malnutrition (e.g., inadequate oral caloric and/or fluid intake); tube feeding or TPN indicated	Life threatening consequences; urgent intervention indicated	Death

***Step-Up Approach to Symptom Management:
Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate**

Management of Anorexia and Cachexia

Special Considerations

Assessment Tools	<ul style="list-style-type: none"> The Oncology Comprehensive Intake (OCI) form has a symptom self-assessment section that asks questions around nutrition. The Nutrition Screening Tool (NST) is used by oncology nutrition to help identify patients who are at risk for malnutrition in ambulatory or hospitalized oncology patients. The NST is located in the OCI form.
BC Cancer Agency - Oncology Nutrition Referral Criteria	<ul style="list-style-type: none"> Automatic Referrals <ul style="list-style-type: none"> Head and neck cancer receiving active treatment. Esophageal and stomach cancer receiving active treatment NOTE: CNS, Thyroid and Lymphoma patients are not included in automatic referral criteria At Risk Referrals <ul style="list-style-type: none"> New patients with a score of 3 or greater on the Nutrition Screening Tool (OCI form) Patients with impaired intake or absorption due to one or more of the following: <ul style="list-style-type: none"> ➤ Anorexia and weight loss ➤ Difficulty chewing or swallowing ➤ Vomiting ➤ Diarrhea Patients: <ul style="list-style-type: none"> ➤ At risk for or have partial bowel obstruction ➤ On tube feeding or TPN ➤ With a colostomy or ileostomy

NORMAL – GRADE 1



NON – URGENT:

Prevention, Support, teaching & follow-up care as required

Patient Care and Assessment	<ul style="list-style-type: none"> Identify factors contributing to loss of appetite or weight- when possible, minimize or eliminate these factors Lab tests that may be ordered: <ul style="list-style-type: none"> - CBC, electrolytes, glucose, calcium, total protein, albumin and pre-albumin, LDH. NOTE: Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin Assess social supports (e.g. caregiver availability, home environment, finances, accessibility to food) Explore beliefs around food:
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	<ul style="list-style-type: none"> - Cultural issues (e.g. Chinese “hot” and “cold” foods) - Family or care giver pressuring intake - Clarify food misconceptions (i.e. foods that promote cancer) - Consider pre-existing diets (i.e. Diabetes, HTN. Discuss liberalization of recommendations to promote intake)
<p>Dietary Management</p> <p>(See BCCA Resource Section for links to Patient Education)</p>	<ul style="list-style-type: none"> • Encourage or Promote adequate hydration and daily oral intake by: <ul style="list-style-type: none"> - Increase fluid intake as tolerated (e.g. soup, shakes, smoothies) - Promote high calorie/protein fluids with medications and throughout the day (e.g. full-fat milk, homemade smoothies, nutritional supplements). - Limit fluid intake to 30 minutes prior to meals to avoid feeling full and 2 hours before normal bedtime so as not to interrupt sleep. Small, frequent meals (5-6) per day. - High calorie, high protein foods (e.g. cheese/cottage cheese, eggs, Greek yogurt, nut butters, protein bars, avocados) - Eating largest meal when feeling most hungry regardless of time of day - Sitting upright for 30 to 60 minutes after eating to facilitate digestion - Avoid preparing foods with strong odours or ask caregivers to prepare such foods and avoid being present during the preparation - If fatigue or meal preparation are a problem, suggest the use of convenience foods (e.g. frozen foods, canned soups), take-out foods, catering service, family or friends preparing meals, or Meals on Wheels® - Oral nutritional supplements as needed to augment diet; particularly if patient has symptoms that interfere with nutritional intake or absorption (eg. Ensure, boost) - Manage contributors to anorexia eg. Chronic nausea, constipation, taste alterations - Avoid spicy foods and limit drinks with coffee and alcohol - Make mealtimes as relaxing and enjoyable as possible. Ask for help when preparing meals. Try keeping a daily log of nutritional intake
<p>Pharmacological Management</p>	<ul style="list-style-type: none"> • Medications for management of other symptoms (e.g. antiemetics for nausea or vomiting, analgesics for pain) • Review medications that may be contributing to anorexia or symptoms that may affect nutritional intake. • If patient is taking Warfarin, in collaboration with physician: <ul style="list-style-type: none"> ○ Consider alternate anticoagulants such as dalteparin ○ Consider increasing the frequency of INR monitoring ○ Discuss with physician and/or pharmacist as appropriate • Medications to stimulate appetite should be administered with caution. Sensitivity to patient and family circumstances should be considered.
<p>Patient Education and Follow-Up</p>	<ul style="list-style-type: none"> • Discuss relationship of nutrition to disease process and treatment • Discuss cancer diagnosis and treatment side effects that may alter nutritional intake • Reinforce that appetite may fluctuate depending on where the patient is in their treatment • Discuss recommendations (as above) to manage symptoms that affect nutritional intake • Advise patient/family to monitor food, fluid intake and weight carefully • Provide contact information and instruct patient/family to contact physician or nurse if <ul style="list-style-type: none"> - Continued lack of appetite with little or no food or fluid intake - Continued weight loss - Signs and symptoms of dehydration - Unable to perform ADLs See Generic Resource Section for ECOG Scale <p>Exercise strategies:</p> <ul style="list-style-type: none"> - Promote exercise as tolerated to maintain lean body mass, strength and physical functioning - Regular exercise may help to regulate appetite. Recommend relaxation exercises 30-60 minutes before meals to decrease tension and promote appetite - Resistance exercises decrease muscle wasting. <p>NOTE: Consider advance directives and stage of disease. May be necessary to counsel and educate patient and loved ones around disease process to focus on patient comfort and relieve caregiver anxiety as pressuring intake can worsen symptoms</p>

GRADE 2 - GRADE 3

OR

- **Moderate to severe decrease in functional or performance status**
- **Presence of symptoms which can impact nutritional intake (e.g. diarrhea, constipation, dysphagia, nausea or vomiting, oral mucositis, xerostomia)**



URGENT:

Requires medical attention within 24 hours

<p>Patient Care and Assessment</p>	<ul style="list-style-type: none"> • Collaborate with physician: <ul style="list-style-type: none"> - To rule out other causes or concomitant causes - Need for further patient assessment at cancer centre or with GP - Consider risk of refeeding syndrome and need for medical evaluation/monitoring of lab work should patient be at risk • Refeeding syndrome can occur. See appendix B for assessment and monitoring • Lab tests that may be ordered: <ul style="list-style-type: none"> - CBC & diff, electrolytes, glucose, calcium, total protein, albumin, pre-albumin, LDH, creatinine, liver function tests • NOTE: Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin
<p>Dietary Management</p>	<ul style="list-style-type: none"> • See Dietary Recommendations in Normal - Grade 1 section above • Referral to Oncology Nutrition (dietitian) for nutrition assessment • Consider need for hydration and/or enteral or parenteral nutritional support. See Appendix B for further detail about enteral and parenteral nutrition • Consider multiple modalities to manage anorexia (e.g. using appetite stimulant with dietary supplementation)
<p>Pharmacological Management</p>	<ul style="list-style-type: none"> • Medications that are most commonly prescribed: <ul style="list-style-type: none"> - Corticosteroids recommended for short term use to stimulate appetite (e.g. dexamethasone, methylprednisolone, prednisolone). - Progestinal agents may also be considered to stimulate appetite (e.g. megestrol acetate, medroxyprogesterone acetate). - Metoclopramide does not stimulate appetite, but may be prescribed to decrease nausea and early satiety. • Medications less commonly prescribed: <ul style="list-style-type: none"> - NSAIDs may mediate the inflammatory response of cytokines - Omega 3 fatty acids (e.g. eicosapentaenoic acid, EPA) may help to normalize metabolism and stabilize weight - Dronabinol may decrease nausea, stimulate mood and appetite, but does not prevent weight loss • Treat depression if appropriate <ul style="list-style-type: none"> - Mirtazapine 7.5-30 mg at hs
<p>Patient Education</p>	<p>Refer to non-urgent patient education and follow-up section</p>

GRADE 4 OR The presence of one of the following:

- No oral intake for 24 hours
- Signs of dehydration
- Sudden, severe decrease in functional or performance status



EMERGENCY:

Requires IMMEDIATE medical attention

<p>Patient Assessment and Care</p>	<ul style="list-style-type: none"> • Admission to hospital may be necessary, notify physician of assessment, and facilitate arrangements as necessary. • If on active treatment, may require a chemotherapy treatment dosage reduction/delay or discontinuation. For direction see <i>Chemotherapy Protocols in Resource Section</i> • Lab tests that may be ordered: CBC, electrolyte profile, glucose, calcium, total protein, albumin, pre-albumin, LDH, creatinine, liver function tests. Assess and monitor. <p>NOTE: Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin.</p> <ul style="list-style-type: none"> • Consider multiple modalities to combat anorexia (e.g. using appetite stimulant with dietary supplementation). • Consider risk of refeeding syndrome and need for medical evaluation /monitoring of lab work should patient be at risk. <p>Refeeding syndrome can occur. See appendix B for assessment and monitoring.</p> <ul style="list-style-type: none"> • Clinical Nursing Support: <ul style="list-style-type: none"> – Vital signs as clinically indicated – Accurate monitoring of daily intake and output, including daily weight – Ongoing assessment of hydration status – Pain and symptom management as appropriate
<p>Dietary Management</p>	<ul style="list-style-type: none"> • Urgent referral to Oncology Nutrition (dietitian) for nutrition assessment and management • Requires hydration and/or enteral or parenteral nutritional support if this matches patient's goals. See Appendix B for further detail about enteral and parenteral nutrition. <ul style="list-style-type: none"> – Encourage increasing fluids as tolerated – Provide mouth care
<p>Pharmacological Management</p>	<ul style="list-style-type: none"> • Medications that may be helpful: <ul style="list-style-type: none"> – Corticosteroids recommended for short term use to stimulate appetite (e.g. dexamethasone, methylprednisolone, prednisolone). – Progestinal agents may also be considered to stimulate appetite (e.g. megestrol acetate, medroxyprogesterone acetate). – Metoclopramide does not stimulate appetite, but may be prescribed to decrease nausea and early satiety. • Medications less likely to be helpful: <ul style="list-style-type: none"> – NSAIDs may mediate the inflammatory response of cytokines. – Dronabinol may decrease nausea, stimulate mood and appetite, but does not prevent weight loss – Cyproheptadine may result in mild appetite increase • Medications not likely to be effective: <ul style="list-style-type: none"> – Cannabinoids, – hydrazine sulfate – melatonin – Omega 3 fatty acids (e.g. eicosapentaenoic acid, EPA)

RESOURCES AND REFERRALS

<p>Referrals</p>	<ul style="list-style-type: none"> • Patient Support Centre or Telephone Care Management • Oncology Nutrition Services (Dietitian) • Pain and Symptom Management/Palliative Care (PSMPC) - if multiple symptoms • Physiotherapist • Speech Language Pathologist
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	<ul style="list-style-type: none"> • Occupational therapy • Patient and Family Counseling for stress management, relaxation, support groups • Home Health Nursing • Family GP
Patient Education Resources	<p>Nutrition Handouts and Pamphlets: http://www.bccancer.bc.ca/health-professionals/clinical-resources/nutrition/nutrition-handouts</p> <ul style="list-style-type: none"> • Increasing Fluid Intake • Eating Challenges with Advanced Cancer: • Coping with Dry Mouth • Coping with Taste Changes • Food Ideas to Cope with Taste and Smell Changes • Food Ideas to Try With a Sore Mouth • Easy to Chew Recipes • Food Ideas to Help with Decreased Appetite • Food Choices to Help Control Nausea • Suggestions for Dealing with Constipation • Food Ideas to Help Manage Diarrhea • Healthy Eating Using High Protein High Energy Foods • High Energy, High Protein Menu and Recipes • High Calorie High protein Smoothie • Nutrition and Lung, Prostate or Breast cancer <p>Resources about managing anxiety, symptoms of grief, positive thinking, etc http://www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support</p>
BC Inter-professional palliative symptom management guideline	<ul style="list-style-type: none"> • https://www.bc-cpc.ca/cpc/wp-content/uploads/2018/06/09.-SMG-Clinical-Best-Practices-print-col-anorexia-2018.pdf
Bibliography List	<ul style="list-style-type: none"> • http://www.bccancer.bc.ca/nursing-site/Documents/Bibliography%20-%20Master%20List.pdf

Contributing Factors	
Cancer Related	<ul style="list-style-type: none"> • Tumors of the head and neck, gastrointestinal system, lung, liver or pancreas • Lymphoma • Metastatic disease • Metabolic abnormalities (increased muscle catabolism, increased lipolysis)- caused by: <ul style="list-style-type: none"> - Tumour products - Endocrine alterations - Host systemic inflammatory response • Hypercalcemia
Cancer Treatment Related	<ul style="list-style-type: none"> • Cancer Treatment can directly or indirectly lead to the following symptoms that can contribute to experiencing anorexia and cachexia NOTE: Severity of side effects depends on the area irradiated and treatment schedule <ul style="list-style-type: none"> - Constipation - Diarrhea - Early feeling of fullness - Fatigue - Oral mucositis - Esophagitis - Nausea or vomiting - Taste/smell changes - Dysphagia - Strictures - Pain - Xerostomia • Surgery: <ul style="list-style-type: none"> - Can cause mechanical or physiologic barriers to adequate nutrition (e.g. short gut) - Imposes an immediate metabolic response that increases energy needs and changes nutrient requirements necessary for wound healing and recovery.
Other	<ul style="list-style-type: none"> • Alcohol/substance abuse

	<ul style="list-style-type: none"> • End-stage diseases (e.g. AIDS, renal or hepatic failure) • Medications (e.g. some opioids, antibiotics, antifungals, antidepressants) • Neurological diseases (e.g. delirium, dementia, Parkinson's disease) • Underlying chronic conditions (e.g. COPD, ulcers, rheumatoid arthritis) • Conditions that may require use of warfarin (e.g. venous thrombosis, cardiac surgeries) • Psychosocial factors: depression, anxiety distress, delirium • Socioeconomic factors (e.g. lack of emotional, social, financial supports) • Belief(s) that eating certain foods will make cancer progress/worsen
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Consequences

- Increased risk of cancer treatment dosage reductions, delays or discontinuation of treatment
- Alteration in immune status
- Weight loss, malnutrition and cachexia, dehydration, muscle mass changes
- Quality of life – psychological distress, fatigue, nausea, compromised role function, decreased functional status, altered body image
- Decreased nutritional status may result in increased INR or increased risk of bleeding for patients on warfarin

Appendix A

Enteral and Parenteral Nutrition

Enteral Nutrition

- **Definition:** Enteral Nutrition: Feeding provided through the gastrointestinal tract via a tube, catheter, or stoma that delivers nutrients distal to the oral cavity
 - **Types:** Enteral nutrition may be delivered via nasogastric tube for when nutritional support is anticipated for a short duration; whereas, a percutaneous endoscopic inserted gastrostomy or jejunostomy tube may be more appropriate nutritional support of a longer duration. A variety of enteral formulas are available to meet the specific nutritional needs of the patient.
 - **Indications:**
 - Individuals with severe malnutrition
 - Diminished ability to ingest or absorb adequate nutrients for a prolonged period of time, and a functioning GI tract (e.g. oral or esophageal cancer).
- NOTE:** Where possible, enteral feeding is preferred method over parenteral nutrition because it preserves GI function, is associated with a lower rate of infection, and costs significantly less. Patient benefits include increased comfort, decreased pain and abdominal distention.
- Possible Complications:**
- Aspiration of gastric contents
 - Dumping syndrome
 - Hyper/hypoglycemia
 - Dehydration/fluid overload
 - Changes in bowel habits
 - Nausea/vomiting
 - Skin irritation
 - Infections
 - Blocked feeding tube
 - Refeeding Syndrome

Parenteral Nutrition (PN)

- **Definition:** The intravenous administration of essential nutrients (protein, carbohydrates, fat, vitamins, trace elements, electrolytes) and water. Central parenteral nutrition is delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium. Peripheral parenteral nutrition delivered into a peripheral vein, usually of the hand or forearm
- The Use of Parenteral Nutrition(PN) Guide in Cancer Patients (available for internal BCCA staff only) [H:\EVERYONE\SYSTEMIC\ChemoOrders\VCC\SupportiveParenteral Nutrition](#)
- Parenteral feeding formulas are based on individual needs and daily caloric requirements.
- Indications:**
- When the patient cannot eat, GI tract not functioning properly and enteral route is not feasible.
 - At risk for malnutrition. (Nothing by Mouth greater than 7 days).
 - When the patient and family or designated representative have a clear understanding of the goals of care and where the use of PN can support those goals.
 - Where the benefit of PN outweighs its risks and burdens.
- Contraindications:**

	<ul style="list-style-type: none"> • Prognosis or treatment plan that does not warrant aggressive nutrition support or a prognosis less than 3 months. • PN should be withheld when severe hyperglycemia, azotemia, encephalopathy, hyperosmolality, severe fluid and/or electrolyte disturbances are present. <p>Possible Complications:</p> <ul style="list-style-type: none"> • Infection (sepsis) • Venous thrombosis • Air embolism • Myocardial perforation • Pneumo/hemothorax • Hyper/hypoglycemia • Metabolic abnormalities. • Fluid electrolyte shifts e.g. Re-feeding Syndrome
<p>Re-feeding Syndrome</p>	<p>Refeeding syndrome can occur when high calorie nutrition is introduced in a malnourished patient. The resulting hyperglycemia can cause shifts in phosphorus, magnesium and potassium from the extracellular to intracellular spaces. Side effects are:</p> <ul style="list-style-type: none"> - Decreased gastric motility resulting in; nausea/vomiting - Decreased absorptive surface area and enzyme production; may result in diarrhea - Rapid fluid volume increases cardiac demands <ul style="list-style-type: none"> • Labs to monitor for refeeding syndrome should include: <ul style="list-style-type: none"> - Serum sodium, potassium, phosphorus, magnesium, calcium, albumin, urea, creatinine and blood glucose. • NOTE: lab monitoring should begin one day prior to initiating nutrition support and continue until goal rate achieved and potassium, phosphate and magnesium within normal range for 48 hours.

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